

CURRICULUM VITAE
(December, 1961)

Carl Edward Sagan

Present Position

Miller Research Fellow in the Institute for Basic Research in Science, the Space Sciences Laboratory, and the Department of Astronomy, University of California, Berkeley.

Date of Birth:

November 9, 1934, New York, N. Y.

Marital Status:

Married, two children.

Education:

Rahway High School, Rahway, New Jersey (graduated 1951).

University of Chicago, Chicago Illinois: A.B. 1954;

S.B. (Physics) 1955; S.M. (Physics) 1956; Ph.D.

(Astronomy and Astrophysics) 1960.

University of Colorado (Physical Chemistry and Nuclear Physics), summer, 1957.

Scholastic Honors:

Honor Entrance Scholarship, University of Chicago, 1951;
University Scholarships 1952-54; Alexander White Scholarship 1954-55; National Science Foundation Predoctoral Fellowship in Physics 1955-56; National Science Foundation Predoctoral Fellowships in Astronomy 1956-57, 1957-58; National Science Foundation Postdoctoral Fellowship in Astronomy, 1960 (declined).
General Honors in the College, University of Chicago, 1954;
Special Honors in the Natural Sciences, University of Chicago, 1954.

Previous Employment and Supervisors:

Research Assistant in Genetics (Dr. H. J. Muller), Indiana University, Bloomington, Indiana, summer, 1952.
 Reader in Physics, the college, University of Chicago (Dr. G.C. Omer, Jr.), 1953-55.
 At McDonald Observatory, Ft. Davis, Texas, for Mars opposition (Dr. G. P. Kuiper), 1956.
 Lecturer, University College (adult education), 1957.
 Asst. Physicist, Physics Research Department, Armour Research Foundation, Chicago, Illinois (Dr. L. Reiffel), 1958-59.
 Research Assistant in Astronomy, Yerkes Observatory, University of Chicago (Dr. G. P. Kuiper) 1960.
 Research supported by purchase orders from Jet Propulsion Laboratory, California Institute of Technology, and National Academy of Sciences, Washington, D.C., 1959-60.

Consulting or Membership Positions on Scientific Panels:

Panel on Extraterrestrial Life, Armed Forces-National Research Council Committee on Bio-Astronautics, National Academy of Sciences, 1959-61.
 Consultant, Space Sciences Division, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, 1960- .
 Member, Committee 14 (Exobiology), Space Science Board, National Academy of Sciences, 1960- .
 Member, Advisory Committee on Space Biology, Headquarters, National Aeronautics and Space Administration, 1960-61.
 Consultant, Biosciences Subcommittee, Space Sciences Steering Committee, Headquarters, National Aeronautics and Space Administration, 1960- .
 Consultant, Planetary Sciences Department, RAND Corporation, Santa Monica, California, 1961- .
 Member, Planetary Atmospheres Study Panel, Space Science Board, National Academy of Sciences, 1960-61.
 Member, Panel on Intelligent Extraterrestrial Life, Space Science Board, National Academy of Sciences, 1961- .

Professional Societies:

American Astronomical Society, American Physical Society, American Geophysical Union, American Rocket Society (senior member), Astronomical Society of the Pacific, British Interplanetary Society (fellow), Genetics Society of America, Society for the Study of Evolution.

Editorial Positions:

Consulting editor for space sciences, Holden-Day, Inc., Publishers, San Francisco.

Associate editor, Icarus: International Journal of the Solar System, forthcoming journal published by Academic Press, New York.

Extant Security Clearances:

Secret, Headquarters, National Aeronautics and Space Administration.

Secret, USAF, RAND Corporation, Santa Monica, California.

Secret, ONI, University of California, Berkeley.

Scientific Papers Published or in Press:

Radiation and the origin of the gene, Evolution 11: 40, 1957.

Indigenous organic matter on the moon, Proc. Nat. Acad. Sci.

U.S. 46: 393, 1960.

Biological contamination of the moon, Proc. Nat. Acad. Sci.

U.S. 46: 396, 1960.

The origin of nitrogen ionization in the upper atmosphere (with J. W. Chamberlain) Planetary and Space Sci. 2: 157, 1960.

The radiation balance of Venus, Calif. Inst. Tech. Jet Propulsion Lab. Tech. Rept. 32 - 34, 1960. Abstract in Astronomical J. 65: 352, 1960.

Molecular synthesis in simulated reducing planetary atmosphere (with S. L. Miller) Astronomical J. 65: 499, 1960 (abstract).

The planet Venus, Science 133: 849, 1961

Organic matter and the moon, National Academy of Sciences - National Research Council Publication 757, 1961.

Scientific Papers Published or in Press (cont'd.):

The abundance of water vapor on Mars, *Astronomical J.* 66: 52, 1961 (abstract).

On the origin and planetary distribution of life, *Radiation Research* 15: 174, 1961.

Is the Martian blue haze produced by solar protons? RAND Corporation Research Memorandum RM-2832-JPL, 1961; *Icarus*, vol. 1, no. 1, in press.

The atmospheres of Mars and Venus (with W. W. Kellogg) National Academy of Sciences-National Research Council Publication 846, 1961.

On the origin of the Venus microwave emission (with K. M. Siegel and D.E. Jones), *Astronomical J.* 66: 52, 1961 (abstract).

The physical environment of Venus: models and prospects, *Space Age Astronomy: Report of the International Symposium*, W. B. Klemperer and A. Deutsch, eds., Academic Press, New York, in press.

Organic matter and life in meteorites, *Proceedings of the Lunar and Planetary Exploration Colloquium*, vol. 2, no. 4, in press.

Structure of the lower atmosphere of Venus, *Icarus*, vol. 1, to be published.

Scientific Papers in Preparation:

Microwave radiative transfer in the atmosphere of Venus (with L. Giver).

Interstellar panspermia.

Planetary biology, to be published in *The Solar System* (G. P. Kuiper, ed.), vol. 4, Chicago: University of Chicago Press.

Models of the atmosphere of Venus, to be published in *Compendium on Planetary Atmospheres*, (Z. Kopal and Z. Sekera, eds.), New York: Academic Press.

The ionospheric model of the Venus atmosphere (with D. E. Jones). *Physics and biology of the planets*, New York: McGraw-Hill.

Expected publication date: 1963.

Public Speaking Experience:

Organized and moderated a public lecture series, "The Creation of Life and the Universe," University of Chicago, 1957.

Participated in CBS Reports television program on space exploration, H.K. Smith, moderator, 1961.

Lectured at USAF Summer Graduate Institute in Astrophysics, 1961.

Prepared and delivered a talk for the Forum Series of the Voice of America.

Delivered numerous papers to scientific meetings.

Grants, Contracts, etc., Awarded:

Biochemical activities of terrestrial microorganisms in simulated planetary environments (with S. Scher), National Aeronautics and Space Administration grant no. NSG-126-61, \$198,000 for 3 years.

A proposal for an infrared experiment on Mars from the Mariner B spacecraft, (with H. Weaver and L.D. Kaplan), designated "experimenter" by National Aeronautics and Space Administration, 1961.

A proposal for an infrared experiment on Venus from the Mariner B spacecraft (with L.D. Kaplan and G. Neugebauer), designated "experimenter" by National Aeronautics and Space Administration, 1961.